

CLAIMS

We claim:

1. A handlebar mounted bicycle control system comprising:
 - a support body adapted for mounting on a bicycle handlebar and defining an interior space;
 - a brake lever supported for movement in the support body;
 - first and second electrical switches located in the support body;
 - a gear change mechanism in communication with the first and second electrical switches and being operatively associated with a bicycle derailleur, wherein the gear change mechanism increases a gear ratio when one of the first and second electrical switches is activated and decreases the gear ratio when another one of the first and second electrical switches is activated;
 - a lever mounted for rotation and positioned such that a portion thereof can be rotated into activating contact with the first electrical switch; and
 - a button disposed on the mount for activating the second electrical switch.
2. The control system of claim 1, further comprising:
 - the brake lever rotatably connected to the mount for rotation through a path of motion; and
 - the lever rotates in a direction generally orthogonal to the path of motion to bring the portion into activating contact with the first electrical switch.

3. The control system of claim 1, wherein the first and second electrical switches are located on opposite sides of a plate disposed in the support body.

4. The control system of claim 1, further comprising a third electrical switch disposed in the support body and in communication with a cycle computer.

5. The control system of claim 3, further comprising a third electrical switch disposed on the plate and being in communication with a cycle computer.

6. The control system of claim 1, further comprising:
the brake lever being pivotally attached to the support body about a pivot axis; and

the button being attached to the support body for movement about an axis that is generally orthogonal to the pivot axis.

7. The control system of claim 1, wherein the control system comprises two support bodies attached to the handlebar, with each separated associated with a separate derailleur.

8. The control system of claim 1, wherein the gear change mechanism is an electrical motor.

9. The control system of claim 1, wherein the brake lever is rotatably attached to the support body about a pivot axis, the lever being pivotally mounted to the brake lever about an axis generally perpendicular to the pivot axis.

10. The control system of claim 3, wherein the plate is positioned in the support body so that the opposite sides are generally perpendicular to a portion of the support body that is adapted to engage the handlebar.

11. A control system for a bicycle having a handlebar, comprising:
a support body adapted for positioning on the handlebar and for supporting a brake lever;
a plate disposed in the support body and having first and second major surfaces;
a first electrical switch located on the first major surface;
a second electrical switch located on the second major surface;
a gear change mechanism in communication with the first and second electrical switches and being operatively associated with at least one of a front derailleur and a rear derailleur, wherein the gear change mechanism increases a gear ratio of the bicycle when one of the first and second electrical switches is activated and decreases the gear ratio when another one of the first and second electrical switches is activated;

a lever having a portion located within the support body and being rotatable such that the portion can be rotated into activating contact with the first electrical switch; and

a button disposed on the support body for activating the second electrical switch.

12. The control system of claim 11, further comprising:

the brake lever rotatably connected to the support body for rotation through a path of motion; and

the lever rotates in a direction generally orthogonal to the path of motion.

13. The control system of claim 11, further comprising a third electrical switch disposed on the plate and being in communication with a cycle computer.

14. The control system of claim 11, further comprising:

the brake lever being pivotally attached to the support body about a pivot axis; and

the button being attached to the support body for movement about an axis that is generally orthogonal to the pivot axis.

15. A control system for a bicycle having a handlebar, comprising:

a mount adapted for positioning on the handlebar and for supporting a brake lever;

first and second electrical switches located in the mount;

a gear change mechanism in communication with the first and second electrical switches and being operatively associated with at least one of a front derailleur and a rear derailleur, wherein the gear change mechanism increases a gear ratio of the bicycle when one of the first and second electrical switches is activated and decreases the gear ratio when another one of the first and second electrical switches is activated;

a first button disposed on the mount for activating the first electrical switch;

and

a second button disposed on the mount for activating the second electrical switch.

16. The control system of claim 15, wherein the first and second electrical switches are located on a plate disposed in the mount.

17. The control system of claim 16, further comprising a third electrical switch disposed on the plate and being in communication with a cycle computer.

18. The control system of claim 15, wherein the control system comprises two of the mounts being attached to the handlebar so that the front derailleur and the rear derailleur are each controlled by a separate mount.

19. The control system of claim 16, wherein the first and second electrical switches are located on opposite sides of the plate, the plate being oriented such that the opposite sides are generally perpendicular to a portion of the mount that is configured to engage the handlebar.

20. A motor driven derailleur control device mountable on a bicycle handlebar, the control device comprising:

- a support body having a portion thereof configured for mounting on the bicycle handlebar, an interior cavity, and exterior walls;

- a brake lever mounted to the support body for movement toward and away from the support body;

- a support plate located within the interior cavity of the support body;

- at least first and second electrical switches mounted on the support plate, each switch being operatively connected to a motor driven derailleur;

- a gear change selector mounted beneath the brake lever and in communication with a selected one of the first and second electrical switches, wherein the gear change selector engages the selected one of the first and second electrical switches to activate a first gear ratio change; and

a gear change switch located on the exterior walls of the support body and in communication with another one of the first and second electrical switches, wherein the gear change switch engages the another one of the first and second electrical switches to activate a second gear ratio change.

21. The control device of claim 20, wherein the brake lever defines a path of motion when moving toward and away from the support body, the gear change selector rotates in a direction generally orthogonal to the path of motion to bring the gear change selector into contact with the selected one of the first and second electrical switches.

22. The control device of claim 20, wherein the first and second electrical switches are located on opposite sides of the support plate.

23. The control device of claim 22, wherein the support plate is oriented so that the opposite sides thereof are generally parallel to opposing interior cavity walls in the support body.

24. The control device of claim 23, further comprising a third electrical switch disposed in the support body and in communication with a cycle computer.

25. The control device of claim 24, wherein the third electrical switch is disposed on the support plate.

26. The control device of claim 20, wherein the gear change switch is attached to the support body for movement about an axis that is generally orthogonal to a path of motion defined by movement of the brake lever toward and away from the support body.

27. The control device of claim 22, wherein the support plate is oriented so that the opposite sides thereof are generally perpendicular to the portion of the support body that is configured for mounting on the bicycle handlebar.

28. The control device of claim 20, wherein the brake lever is rotatably attached to the support body about a pivot axis, the gear change selector being pivotally mounted to the brake lever about an axis generally perpendicular to the pivot axis.

29. A control system for a bicycle having a handlebar, the control system comprising:

a support body having a portion thereof configured for mounting on the handlebar, an interior cavity, and exterior walls;

at least first and second electrical switches disposed within the interior cavity of the support body, each switch being operatively connected to at least one of a front derailleur and a rear derailleur;

a gear change selector pivotably moveable about the support body and capable of selecting one of the first and second electrical switches, wherein engagement of the gear change selector with one of the first and second electrical switches causes a first gear ratio change; and

a gear change switch located on the exterior walls of the support body and in communication with another one of the first and second electrical switches, wherein engagement of the gear change switch with the another one of the first and second electrical switches causes a second gear ratio change.

30. The control system of claim 29, wherein the first and second electrical switches are located on opposite sides of a support plate located within the interior cavity of the support body.

31. The control system of claim 30, wherein the support plate is oriented so that the opposite sides thereof are generally parallel to opposing interior cavity walls in the support body.

32. The control system of claim 31, further comprising a third electrical switch disposed in the support body and in communication with a cycle computer.

33. The control system of claim 32, wherein the third electrical switch is disposed on the support plate.

34. The control system of claim 32, wherein the control system comprises two of the support bodies being attached to the handlebar so that the front derailleur and the rear derailleur are each controlled by a separate support body.

35. A method of providing a motor driven derailleur control for a bicycle, the method comprising the following steps:

providing a support body having an interior cavity and a portion configured for mounting on a handlebar of the bicycle;

installing at least first and second switches on a support plate;

positioning the support plate in the interior cavity;

pivotaly interconnecting a gear change selector with the motor driven derailleur control and establishing communication between the gear change selector and one of the first and second switches, wherein when the gear change selector activates the one of the first and second switches a first gear ratio change occurs; and

attaching a gear change switch to the motor driven derailleur control and establishing communication between the gear change switch and another one of the

first and second switches, wherein when the gear change switch activates the another one of the first and second switches a second gear ratio change occurs.

36. The method of claim 35, wherein the step of installing the first and second switches comprises positioning the first and second switches on opposite sides of the support plate.

37. The method of claim 35, wherein the step of positioning the support plate comprises orienting the support plate so that opposite sides thereof are generally parallel to opposing interior cavity walls in the support body.

38. The method of claim 36, further comprising the step of installing a third switch in the support body and establishing communication between the third switch and a cycle computer.

39. The method of claim 38, wherein the step of installing the third switch comprises installing the third switch on the support plate.

40. The method of claim 35, further comprising attaching a brake lever to the support body so that the motor driven derailleur control can change a gear change ratio of the bicycle while braking.

41. The method of claim 35, wherein the step of positioning the support plate comprises orienting the support plate so that opposite sides thereof are generally perpendicular to the portion configured for mounting on the handlebar.